What is claimed is:

1. A magnetic actuator assembly comprising:

a spool surrounded by a coil;

a primary plate disposed at a first end of said spool;

a secondary plate disposed at a second end opposite said first end;

a plunger slidably disposed within respective annular portions defined by said spool and said secondary plate and surrounded by said coil energizable to urge said plunger toward said primary plate;

a first spring biasing a ball against a supply valve seat configured in one of said primary plate and a valve seat assembly,

a rod having a first portion in operable communication with said plunger and a second portion in contact with said ball opposite said first spring; and

a second spring biasing said plunger and rod toward an exhaust valve seat configured in said one of said primary plate and said valve seat assembly opposite said supply valve seat,

wherein said supply valve seat and said exhaust valve seat are in fluid communication with each other via a bore in said one of said primary plate and said valve seat assembly connecting said supply valve seat and said exhaust valve seat, said bore having a control port intermediate said supply valve seat and said exhaust valve seat.

2. The assembly of claim 1, wherein said rod is stepped and defined by a shoulder defining an interface between said first and second portions said rod, said second portion configured to be translatable within said bore while allowing fluid communication between said supply and exhaust seats, said first portion configured to seal said exhaust valve seat when said end surface defining said first portion abuts said exhaust valve seat.

3. The assembly of claim 2, wherein said rod is case hardened at least in an area corresponding to said exhaust valve seat area.

4. The assembly of claim 2, wherein said rod in non-metallic.

5. The assembly of claim 4, wherein said first portion of said rod is detachably coupled to said plunger via a cavity configured in said plunger, said cavity allowing said first portion of said rod to float therein to allow said second portion of said rod to align with at least one of said bore and said supply valve seat.

6. The assembly of claim 5 further comprising a stop disposed within a stepped annular portion defined by said primary plate, said stop having an opening corresponding to a perimeter defining said first portion of said rod, said stop configured to control an air gap setting of said plunger.

7. The assembly of claim 6, wherein said stop prevents contact between said plunger and said primary plate when said plunger is fully translated toward said primary plate and reduces magnetic flux acting on a fluid in said bore when said exhaust valve seat is closed.

8. The assembly of claim 1, wherein said exhaust valve seat is in fluid communication with an exhaust port creating an exhaust fluid path therebetween distal from a magnetic flux path when said coil is energized.

9. The assembly of claim 1, wherein said spool includes terminals extending therefrom for connection with an energizing power source.

10. The assembly of claim 1, wherein said spool and said secondary plate include one of a slotted and a tabbed interface configured to control concentricity therebetween while reducing a secondary magnetic air gap between said secondary plate and said plunger.

11. The assembly of claim 1, wherein said first and second springs maintain contact between said plunger, said rod, and said ball.

12. The assembly of claim 11, said second spring has a second preload less than a first preload of said first spring, said second preload configured to be adjustable

to control the amount of said magnetic flux needed to overcome a net total preload of said first and second springs opposing said magnetic flux.

13. The assembly of claim 12, wherein said plunger effected by said net total preload of said first spring and said second spring in series communication when said plunger matches said net total preload.

14. The assembly of claim 1, wherein the assembly is a proseal configuration, said first and second springs opposing each other allowing reduced axial forces between components of the assembly thus projecting less radial forces.

15. The assembly of claim 1, wherein integration of said supply valve seat, said exhaust valve seat, and said control port with said one of said primary plate and said valve assembly allows for custom de-energized stroke setting.

16. A magnetic actuator assembly for controlling a plunger in an automatic transmission control valve assembly in a vehicle comprising:

a spool surrounded by a coil;

a primary plate disposed at a first end of said spool;

a secondary plate disposed at a second end opposite said first end;

a plunger slidably disposed within respective annular portions defined by said spool and said secondary plate and surrounded by said coil energizable to urge said plunger toward said primary plate;

a first spring biasing a ball against a supply valve seat configured in one of said primary plate and a valve seat assembly,

a rod having a first portion in operable communication with said plunger and a second portion in contact with said ball opposite said first spring; and

a second spring biasing said plunger and rod toward an exhaust valve seat configured in said one of said primary plate and said valve seat assembly opposite said supply valve seat,

wherein said supply valve seat and said exhaust valve seat are in fluid communication with each other via a bore in said primary plate connecting said supply

valve seat and said exhaust valve seat, said bore having a control port intermediate said supply valve seat and said exhaust valve seat.

17. A method to reduce stroke variation in a magnetic actuator assembly, the method comprising:

integrating corresponding valve seats of a supply port and an exhaust port into a primary plate; and

disposing a control port in fluid communication with a bore coupling said valve seats of said supply and exhaust ports.

18. The method of claim 17 further comprising:

disposing said exhaust port in fluid communication with said corresponding valve seat such that an exhaust fluid path from said corresponding valve seat to the atmosphere is distal from a magnetic flux of the actuator.

19. A method to reduce the radial forces projected from the axial forces acting on a magnetic actuator assembly, the method comprising:

detachably coupling a non-magnetic rod to a magnetic plunger;

configuring said rod having a first portion and a second portion, wherein an interface between said first and second portions is stepped and defined by a shoulder therebetween, said first portion adapted to float relative to connection with said plunger while said second portion coaxially aligns with a corresponding valve seat.

20. The method of claim 19, wherein said second portion of said rod operably acts against a ball biased against said valve seat limiting fluid communication therethrough.

21. The method of claim 20, wherein said valve seat is in fluid communication with a supply port, said valve seat in fluid communication with an exhaust valve seat in fluid communication with an exhaust port, said supply valve seat and exhaust valve seat integrated in a single component and connected via a bore thereof, said second portion of said rod be translatable within said bore while allowing

fluid communication between said supply and exhaust seats, said first portion configured to seal said exhaust valve seat when an end surface defining said first portion abuts said exhaust valve seat.

22. The method of claim 21 further comprising a means for aligning second portion of said rod within at least one of said valve seats and said bore.

23. The method of claim 22, wherein said means includes a stop proximate said exhaust valve seat, said stop configured with an opening corresponding to a perimeter defining said first portion for slidable translation therethrough, said stop configured to provide exhaust fluid from said exhaust valve seat to a side exhaust port.

24. The method of claim 23, wherein at least said first portion of said rod is case hardened to prevent wear proximate said exhaust valve seat.